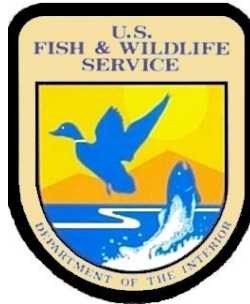


The Road Inventory of Tualatin River National Wildlife Refuge Sherwood, OR



Prepared By:
Federal Highway Administration
Central Federal Lands Highway Division
February 2013



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INTRODUCTION

The Transportation Equity Act for the 21st Century (Public Law 105-178) created the Refuge Roads Program. Refuge roads are those public roads that provide access to or within a unit of the National Wildlife Refuge System and for which title and maintenance responsibility is vested in the United States Government. Funds from the Highway Trust Fund are available for refuge roads and can be used by the station to pay the cost of:

- (a) Maintenance and improvements of refuge roads.
- (b) Maintenance and improvements of:
 - (1) Adjacent vehicle parking areas
 - (2) Provision for pedestrians and bicycles and
 - (3) Construction and reconstruction of roadside rest areas that are located in or adjacent to wildlife refuges
- (c) Administrative costs associated with such maintenance and improvements.

The funds available for refuge roads are to be disbursed based on the relative needs of the various refuges in the National Wildlife Refuge System, and taking into consideration:

- (a) The comprehensive conservation plan for each refuge;
- (b) The need for access as identified through land use planning; and
- (c) The impact of land use planning on existing transportation facilities.

To determine the relative needs of the U.S. Fish and Wildlife Service, the Federal Highway Administration (FHWA) was asked to inventory all public access roads and parking lots and provide a condition assessment of each. In 2008 the inventory was expanded to include administrative (service use only) roads and parking lots. An FHWA representative meets with refuge personnel to identify route segments and assign route numbers and functional classifications (See Appendix) for each route. All roads and parking lots are mapped using Trimble GPS units and visually assessed for condition using the RSL method of evaluation developed at Utah State University (See Appendix). Culverts, Gates, Guardrails and Low Water Crossings are also mapped and inspected for any obvious defects.

An estimate is provided, in year 2008 dollars, based on the condition determined by the rating system. Estimates are based upon data and location factors from the 2008 RS Means Heavy Construction Cost Data 22nd Annual Edition. Cost estimates should be evaluated on a case-by-case basis when being used for programming purposes.

Native Surfaced roads and parking lots already inventoried will not be re-inventoried and will not appear individually in report chapters 5, 6 and 8. Mileages and areas of native surfaced roads and parking lots will still appear in all summaries in the report and will remain in the road inventory database. In addition to this report, the FHWA will furnish the condition ratings of each route and segment to the Fish and Wildlife Service in a Microsoft Access database so the data can be included in their Real Property Inventory.

Tualatin River NWR

Summaries

Route Miles and Percentages by Functional Class and Condition

Condition Rating (Based on RSL)*

F. C.	Excellent		Good		Fair		Poor		Failed		TOTAL MILES
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	
I	0.00	0.0%	0.30	100.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.30
II	0.10	100.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.10
III	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
IV	0.25	100.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.25
V	0.00	0.0%	4.22	63.9%	2.38	36.1%	0.00	0.0%	0.00	0.0%	6.60
Totals	0.35	4.8%	4.52	62.3%	2.38	32.8%	0.00	0.0%	0.00	0.0%	7.25

*For a description of condition ratings for the various surface types see the Appendix.

Route Miles and Percentages by Surface Type and Condition

Paved Condition Rating [Condition(RSL)]

Surface	Excellent		Good		Fair		Poor		Failed		TOTAL MILES
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	
AS	0.35	53.8%	0.30	46.2%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.65
CO	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
Totals	0.35	53.8%	0.30	46.2%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.65

Unpaved Condition Rating [Condition(RSL)]

Surface	Excellent		Good		Fair		Poor		Failed		TOTAL MILES
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	
GR	0.00	0.0%	3.43	63.2%	2.00	36.8%	0.00	0.0%	0.00	0.0%	5.43
NA	0.00	0.0%	0.79	67.5%	0.38	32.5%	0.00	0.0%	0.00	0.0%	1.17
PR	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00
Totals	0.00	0.0%	4.22	63.9%	2.38	36.1%	0.00	0.0%	0.00	0.0%	6.60

Square Footage (Parking Areas)

Condition Rating

Surface	Excellent		Good		Fair		Poor		Failed		Total Square Feet
	Square Feet	%	Square Feet	%	Square Feet	%	Square Feet	%	Square Feet	%	
AS	0	0.0%	5,453	100.0%	0	0.0%	0	0.0%	0	0.0%	5,453
CO	13,641	64.5%	0	0.0%	7,513	35.5%	0	0.0%	0	0.0%	21,154
GR	0	0.0%	20,661	100.0%	0	0.0%	0	0.0%	0	0.0%	20,661
NA	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
PR	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0
Totals	13,641	28.9%	26,114	55.2%	7,513	15.9%	0	0.0%	0	0.0%	47,268

Tualatin River NWR Summaries

Route Miles and Percentages by Use Type and Condition

Road Condition Rating: Public/Administrative Use

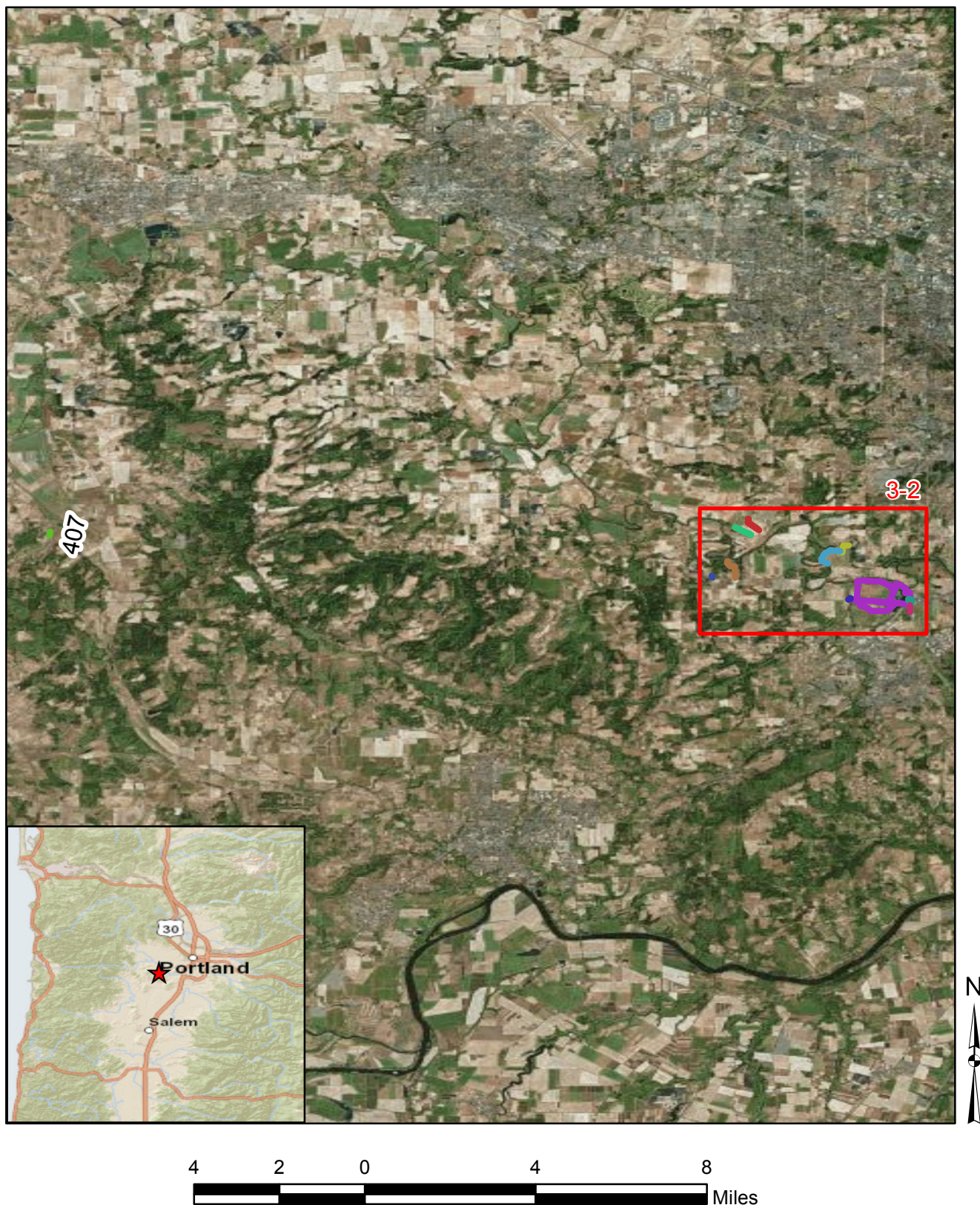
USE TYPE	Excellent		Good		Fair		Poor		Failed		TOTAL MILES
	MILES	%	MILES	%	MILES	%	MILES	%	MILES	%	
Public (FC I-III)	0.10	25.0%	0.30	75.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.40
Admin (FC IV-V)	0.25	3.6%	4.22	61.6%	2.38	34.7%	0.00	0.0%	0.00	0.0%	6.85
Totals	0.35	4.8%	4.52	62.3%	2.38	32.8%	0.00	0.0%	0.00	0.0%	7.25

Parking Condition Rating: Public/Administrative Use

USE TYPE	Excellent		Good		Fair		Poor		Failed		Total Sq Ft
	Sq Ft	%	Sq Ft	%	Sq Ft	%	Sq Ft	%	Sq Ft	%	
Public	13641	100.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	13,641
Admin	0	0.0%	26114	77.7%	7513	22.3%	0	0.0%	0	0.0%	33,627
Totals	13,641	28.9%	26,114	55.2%	7,513	15.9%	0	0.0%	0	0.0%	47,268

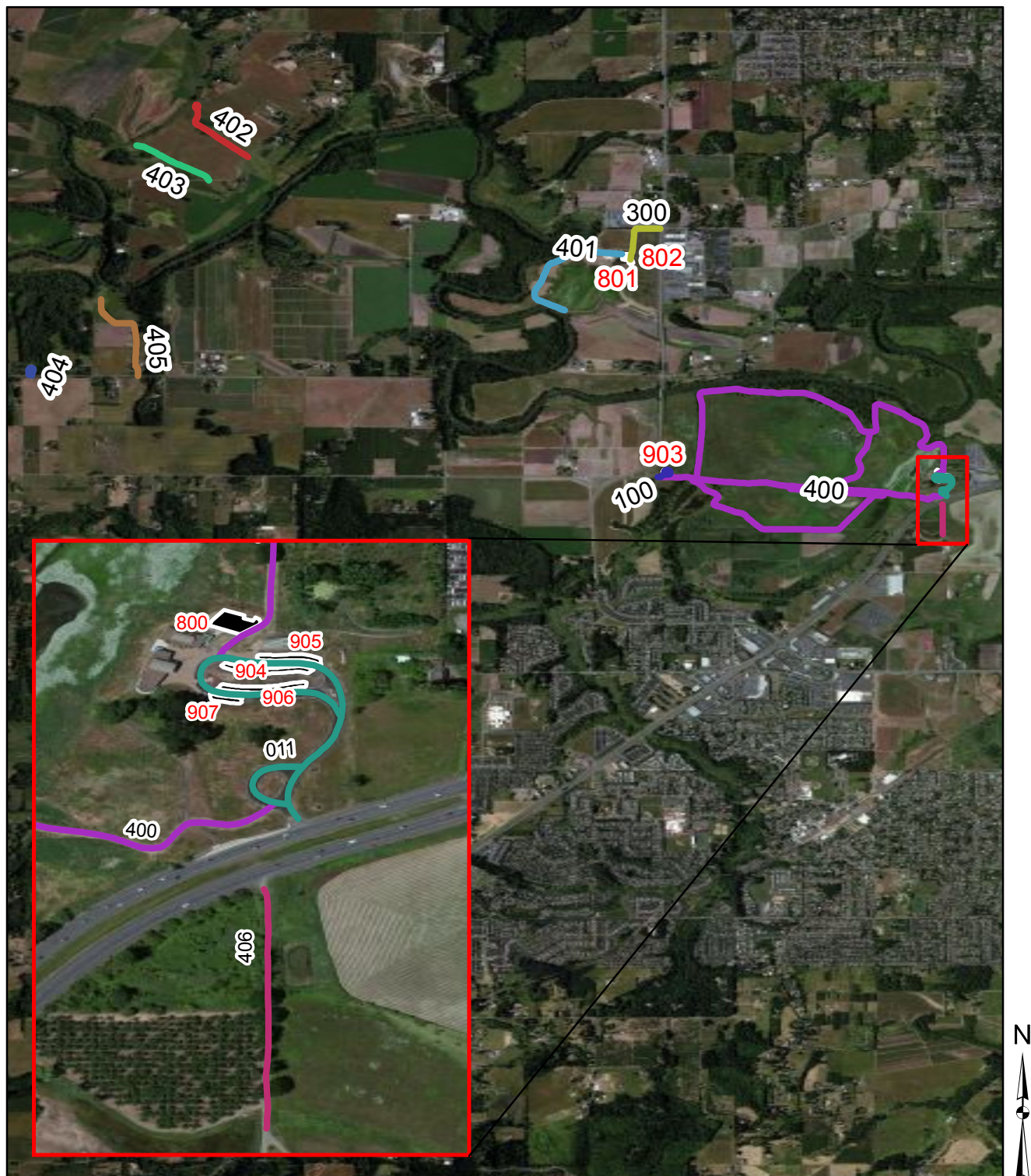
Tualatin River National Wildlife Refuge

Route Location Map



Tualatin River National Wildlife Refuge

Route Location Map



Tualatin River - 13600

Route Identification List

Shading Color Key:

White = Paved Routes
Yellow = Unpaved Routes

RTE #	Asset Number	ROUTE NAME	RTE MI	ROUTE DESCRIPTION	PAVED MI	UN-PAVED MI	LANES	FC
011	-	Visitor Center Road	0.30	From Pacific Highway to end of loop	0.30	-	2	1
100	10053992	Wayside Entrance Road	0.10	From Elsner Road to end of loop	0.10	-	2	2
300	10004607	Dennis Driveway Road	0.25	From Beef Bend Road to Dennis House Parking (Route 801)	0.25	-	2	4
400	10004608	Steinborn Operations Road	4.49	From Visitor Center Road (Route 011) to Wayside Entrance Road (Route 100)	-	4.49	1	5
401	10004641	Dennis Operation Road	0.59	From Shop Parking (Route 802) to end of route	-	0.59	1	5
402	10004655	Oleson Fish Pond Road	0.38	From Pleasant Valley Road to end of loop	-	0.38	1	5
403	10054825	Oleson Wetland Service Road	0.32	From Pleasant Valley Road to end of route	-	0.32	1	5
404	10004638	Harmon Service Road	0.09	From Scholls Sherwood Road to end of loop	-	0.09	1	5
405	10004639	Naujock Service Road	0.47	From Scholls Sherwood Road to end of route	-	0.47	1	5
406	-	Onion Flats Road	0.15	From Pacific Highway to end of route	-	0.15	1	5
407	10063044	Beecher Roadway	0.10	From Flett Road to end of route	-	0.10	1	5

Tualatin River - 13600
Route Identification List (Parking)

Shading Color Key:

White = Paved Routes
Green = Unpaved Routes

Route #	Asset Number	ROUTE NAME	Area (Sq Ft)	ROUTE DESCRIPTION	Surface Type
800	10055097	Administrative Building Staff Parking	5,453	From Steinborn Operations Road (Route 400)	Asphalt
801	10004598	Dennis House Parking	7,513	From Dennis Driveway Road (Route 300)	Concrete
802	10004598	Shop Parking	20,661	From Dennis Driveway Road (Route 300)	Gravel
903	10054037	Wayside Parking Area	1,776	From Wayside Entrance Road (Route 100)	Concrete
904	-	Visitor Center Parking 2	3,761	From Visitor Center Road (Route 011)	Concrete
905	-	Visitor Center Parking 1	2,909	From Visitor Center Road (Route 011)	Concrete
906	-	Visitor Center Parking 3	3,765	From Visitor Center Road (Route 011)	Concrete
907	-	Visitor Center Parking 4	1,430	From Visitor Center Road (Route 011)	Concrete

CHANGES TO THE FISH AND WILDLIFE SERVICE ROAD INVENTORY REPORT

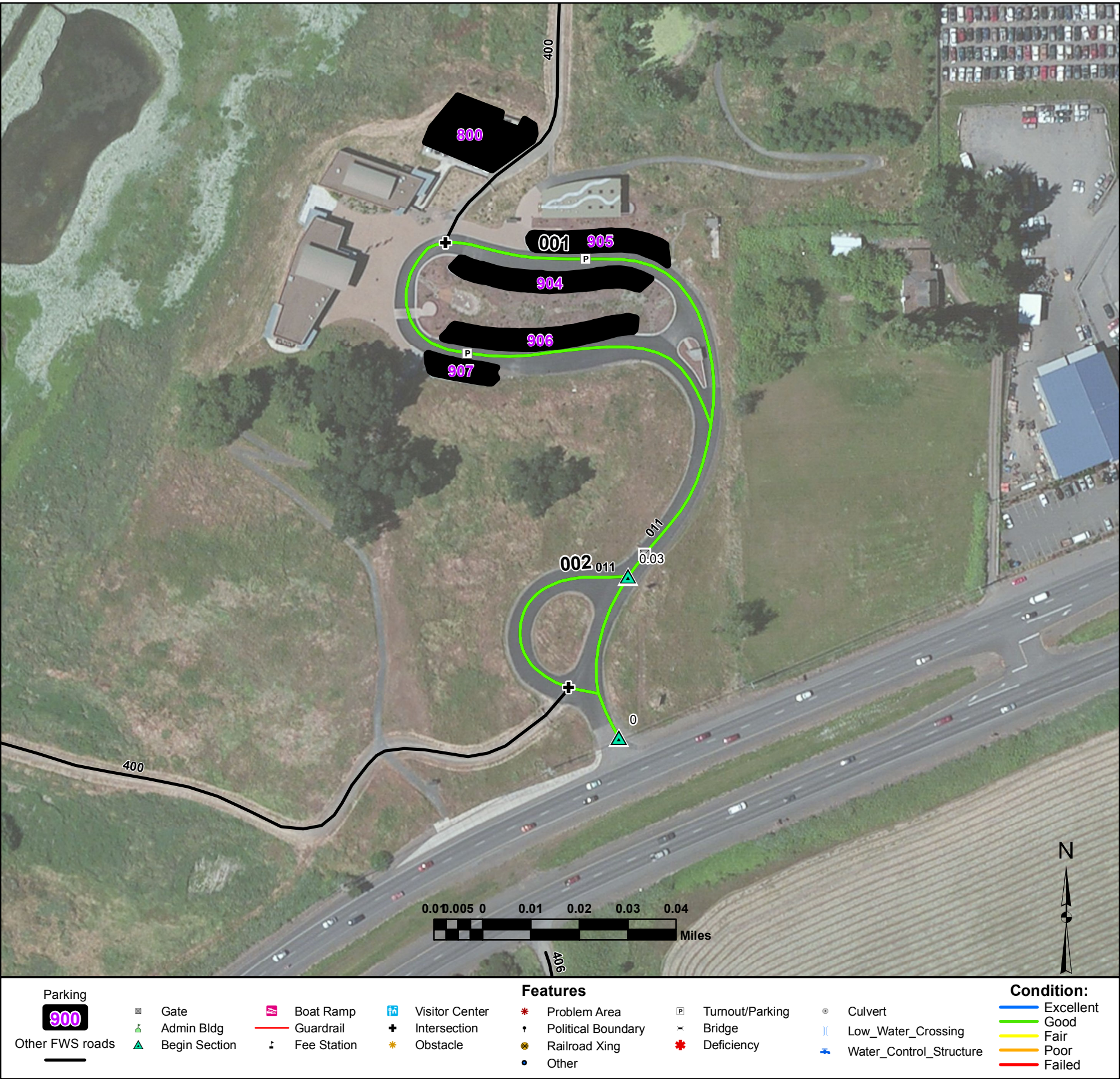
Tualatin River NWR

Routes added to previous inventory:		
Rte #	Rte Name	Reason For Addition
802	Shop Parking	New Administrative Route
801	Dennis House Parking	New Administrative Route
800	Administrative Building Staff Parking	New Administrative Route
407	Beecher Roadway	New Administrative Route
406	Onion Flats Road	New Administrative Route
405	Naujock Service Road	New Administrative Route
404	Harmon Service Road	New Administrative Route
403	Oleson Wetland Service Road	New Administrative Route
402	Oleson Fish Pond Road	New Administrative Route
401	Dennis Operation Road	New Administrative Route
400	Steinborn Operations Road	New Administrative Route
300	Dennis Driveway Road	New Administrative Route
011	Visitor Center Road	New Public Route

Routes removed from previous inventory:		
Rte #	Rte Name	Reason For Removal
902	Shop Parking	Visitor Center Moved
901	Headquarter 2	Visitor Center Moved
900	Headquarter	Visitor Center Moved
10	Headquarters RD	Visitor Center Moved

Routes modified from previous inventory:			
Rte #	Rte Name	Type of Modification	Description of Modification

Comments:



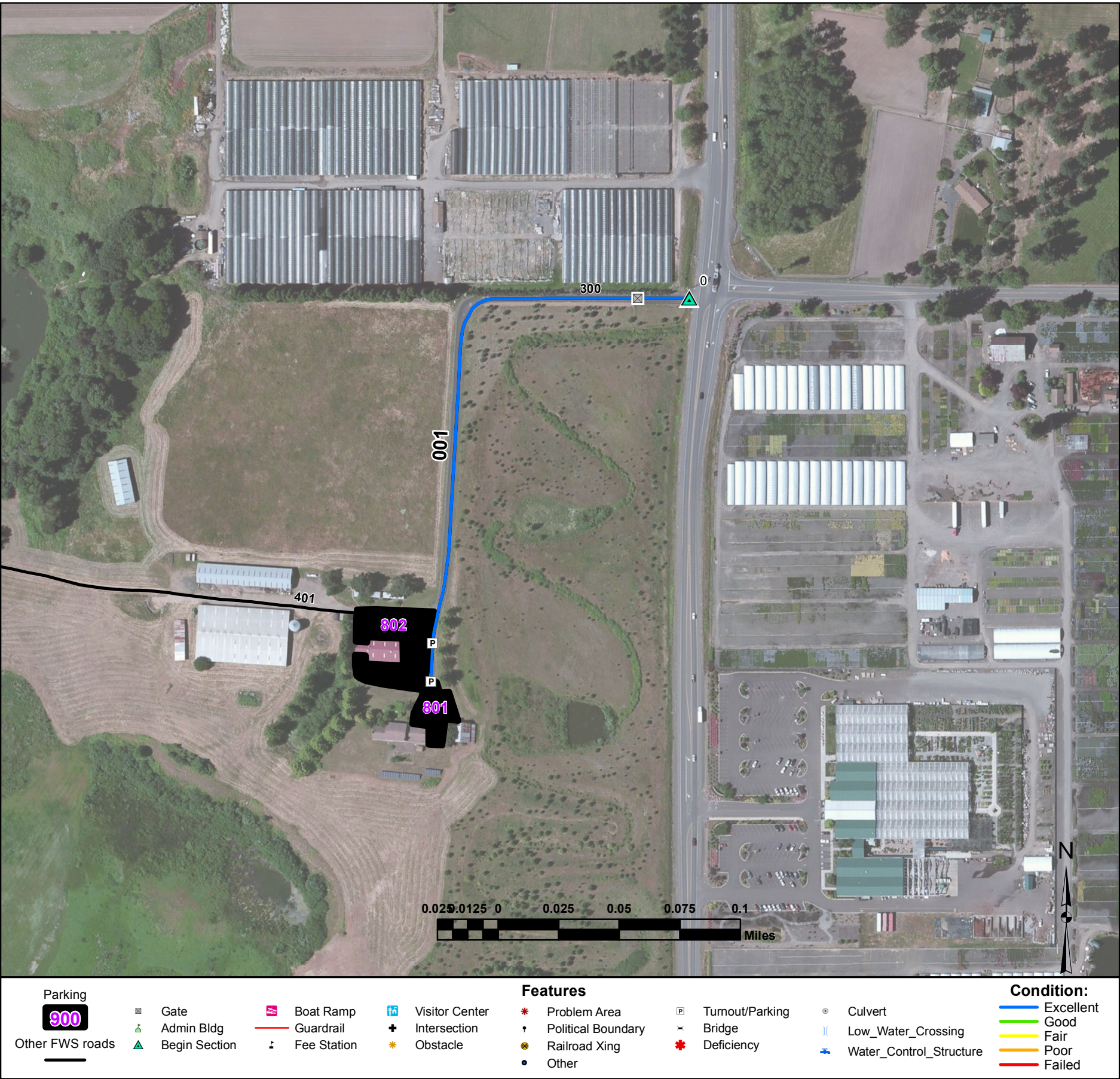


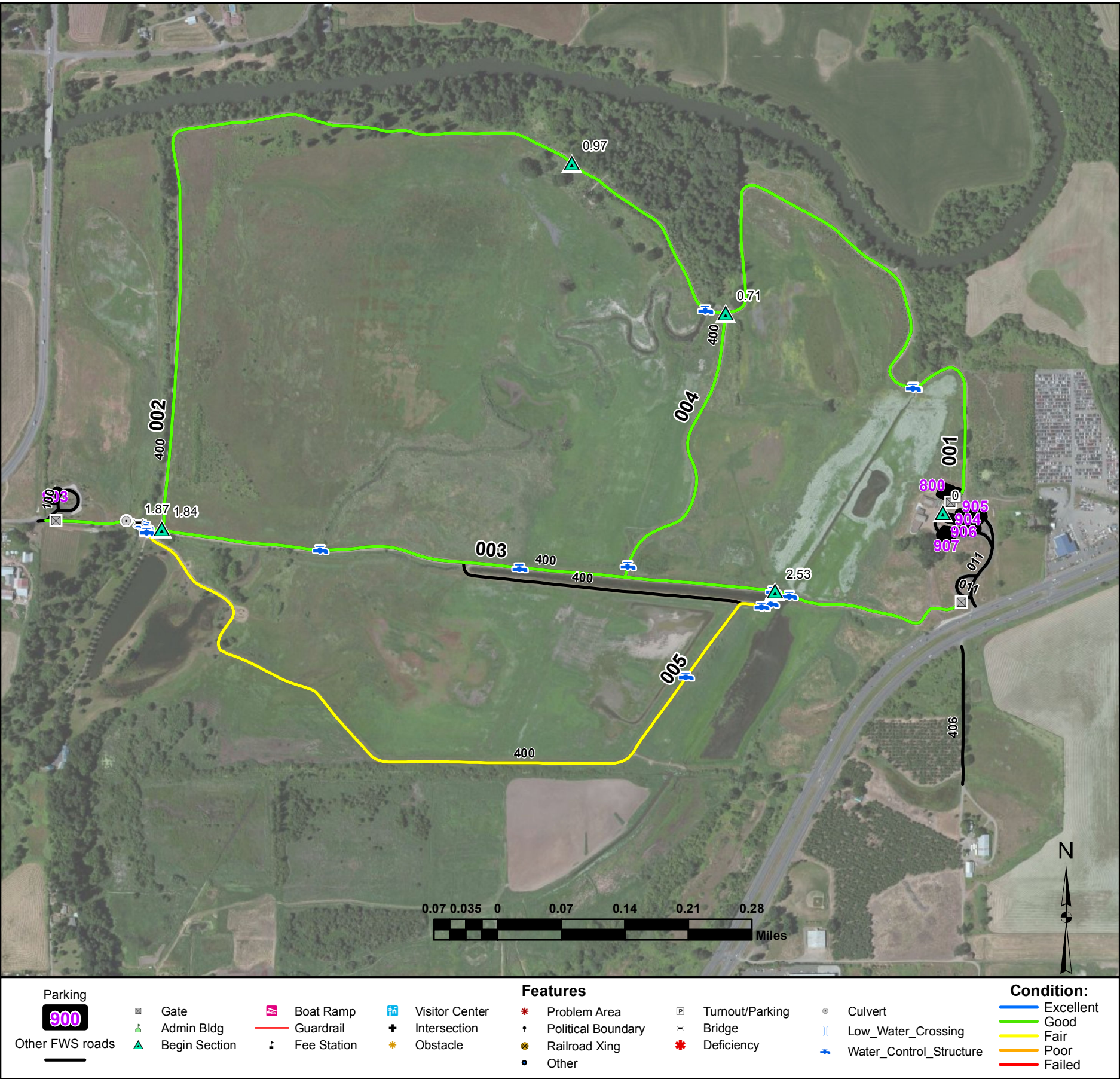
Route Number: 100

Total Route Mileage: 0.10

Asset Number	10053992				
Section Number	001				
Section Length (miles)	0.10				
Inspection Date	01-07-2013				
Surface Type	Asphalt				
Number of Lanes	2				
Roadway Width (feet)	20				
Condition	Excellent				
Remaining Service Life (years)	20				
Estimated Cost to Repair	\$0				
Current Replacement Value	\$136,900				

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0						
Intersection	001-0.01						
Gate	001-0.02						
Turnout/Parking	001-0.09						





Steinborn Operations Road

From Visitor Center Road (Route 011) to Wayside Entrance Road (Route 100)

Route Number: 400

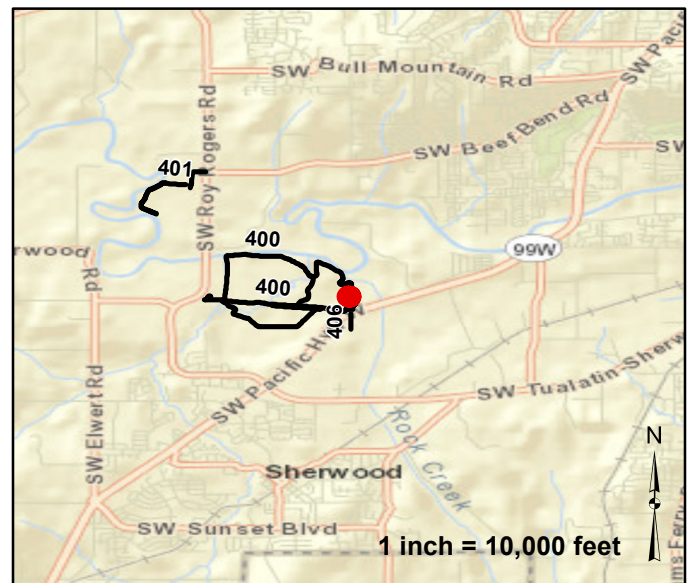
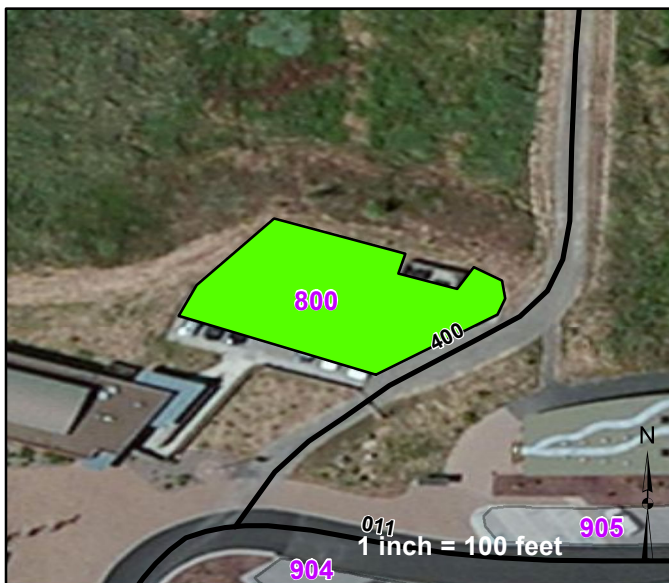
Total Route Mileage: 4.49

Asset Number	10004608	10004608	10004608	10004608	10004608
Section Number	001	002	003	004	005
Section Length (miles)	0.97	1.02	0.91	0.34	0.94
Inspection Date	01-07-2013	01-07-2013	01-07-2013	01-07-2013	01-07-2013
Surface Type	Gravel	Gravel	Gravel	Gravel	Gravel
Number of Lanes	1	1	1	1	1
Roadway Width (feet)	12	12	12	12	12
Condition	Good	Good	Good	Good	Fair
Remaining Service Life (years)	7	7	7	7	4
Estimated Cost to Repair	\$1,800	\$1,900	\$1,700	\$600	\$3,800
Current Replacement Value	\$765,700	\$805,200	\$718,300	\$268,400	\$742,000

Features	Mile Post	Features	Mile Post	Features	Mile Post	Features	Mile Post
Begin Section	001-0.0	Water Control Structure	003-2.24				
Gate	001-0.02	Water Control Structure	003-2.53				
Turnout/Parking	001-0.02	Water Control Structure	003-2.55				
Water Control Structure	001-0.21	Gate	003-2.74				
Water Control Structure	001-0.21	Begin Section	004-0.71				
Water Control Structure	001-0.74	Water Control Structure	004-1.04				
Begin Section	002-0.97	Begin Section	005-2.53				
Water Control Structure	002-1.86	Water Control Structure	005-2.54				
Bridge	002-1.87	Water Control Structure	005-2.55				
Water Control Structure	002-1.87	Water Control Structure	005-2.67				
Culvert	002-1.89	Water Control Structure	005-3.46				
Culvert	002-1.89	Water Control Structure	005-3.46				
Gate	002-1.98	Water Control Structure	005-3.46				
Begin Section	003-1.84						
Water Control Structure	003-2.02						

Route Number: 800
Administrative Building Staff Parking
 From Steinborn Operations Road (Route 400)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10055097	5453	12	Good	Asphalt	\$1,200	01-07-2013	\$56,600



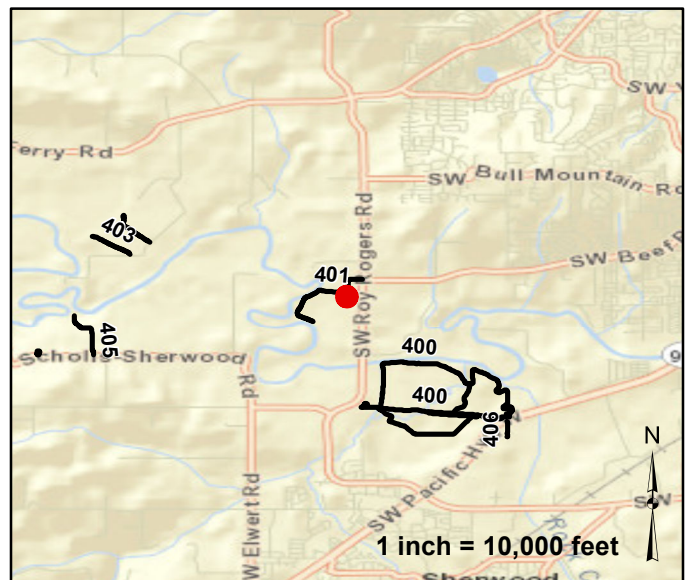
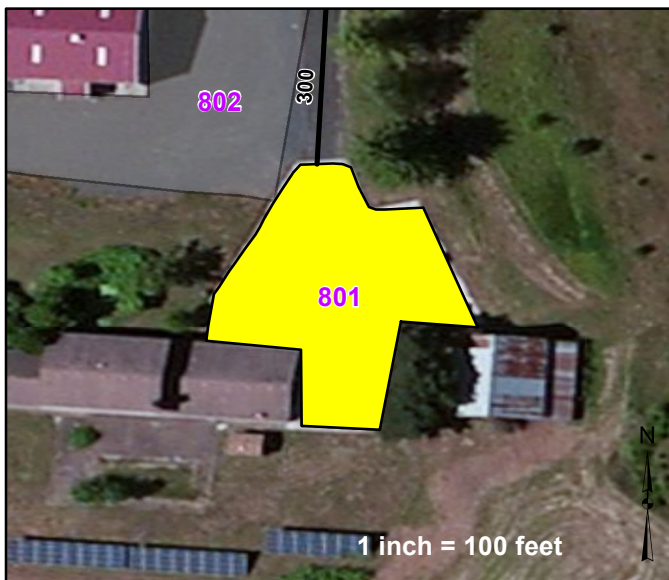
Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
Other FWS roads		Admin Bldg		Guardrail		Other	Good
		Begin Section		Fee Station		Problem Area	Fair
						Culvert	Poor
						Low_Water_Crossing	Failed
						Water_Control_Structure	

Route Number: 801

Dennis House Parking

From Dennis Driveway Road (Route 300)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10004598	7513	20	Fair	Concrete	\$15,600	01-07-2013	\$94,700



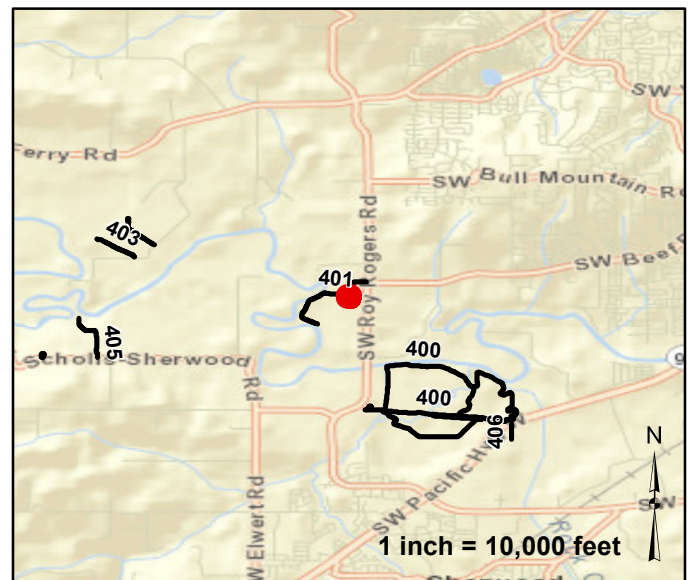
Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
Other FWS roads		Admin Bldg		Guardrail		Other	Good
		Begin Section		Fee Station		Problem Area	Fair
						Culvert	Poor
						Low_Water_Crossing	Failed
						Water_Control_Structure	

Route Number: 802

Shop Parking

From Dennis Driveway Road (Route 300)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10004598	20661	50	Good	Gravel	\$3,500	01-07-2013	\$117,100

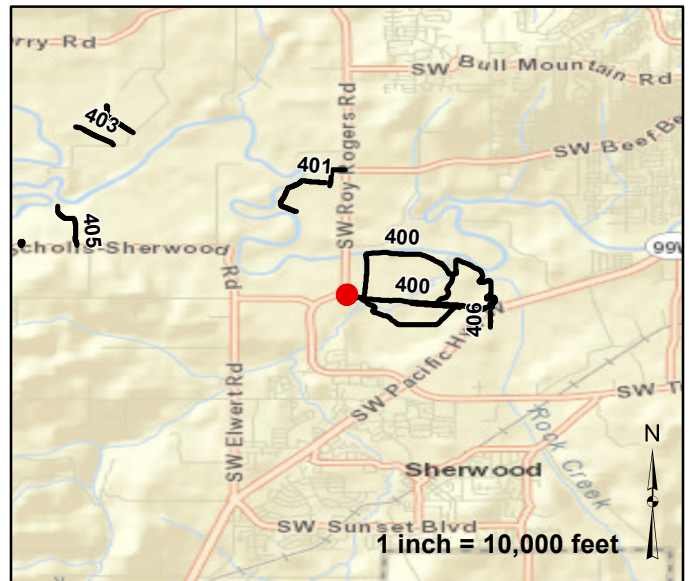
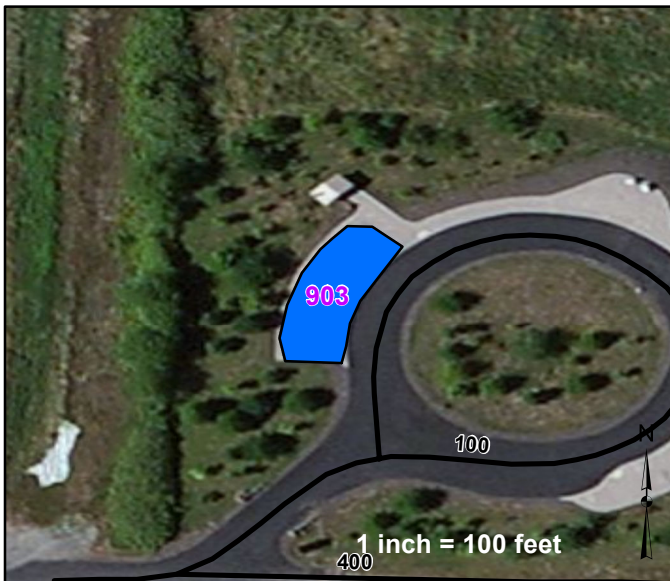


Parking		Features				Condition:	
	Other FWS roads	Gate	Boat Ramp	Visitor Center	Culvert	Excellent	
		Admin Bldg	Guardrail	Other	Low Water Crossing	Good	
		Begin Section	Fee Station	Problem Area	Water Control Structure	Fair	
						Poor	
						Failed	

Route Number: 903 Wayside Parking Area

From Wayside Entrance Road (Route 100)

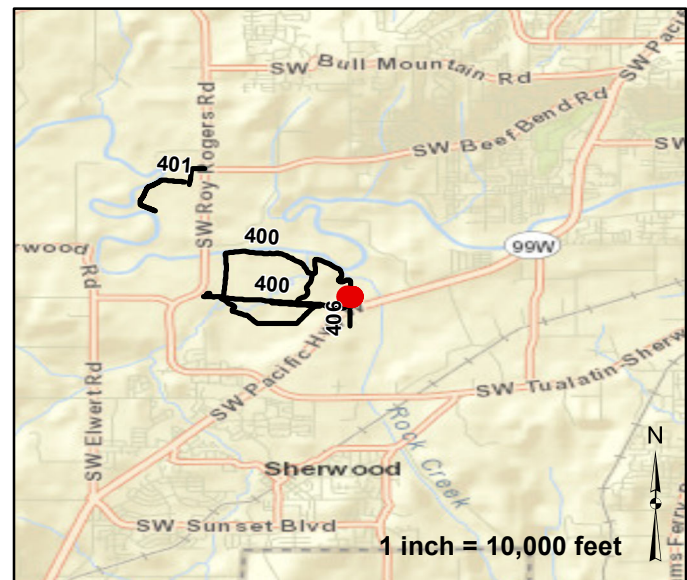
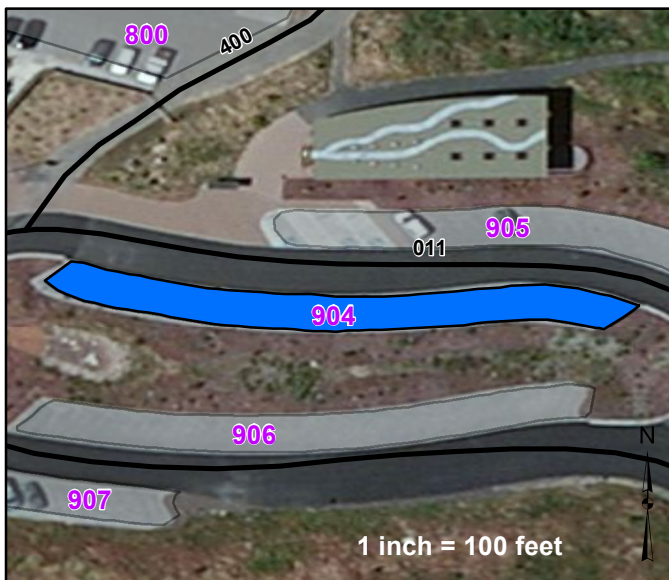
Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
10054037	1776	6	Excellent	Concrete	\$0	01-07-2013	\$22,400



Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
	Admin Bldg		Guardrail		Other		Good
	Begin Section		Fee Station		Problem Area		Fair
	Other FWS roads		Culvert		Low_Water_Crossing		Poor
			Water_Control_Structure				Failed

Route Number: 904
Visitor Center Parking 2
 From Visitor Center Road (Route 011)

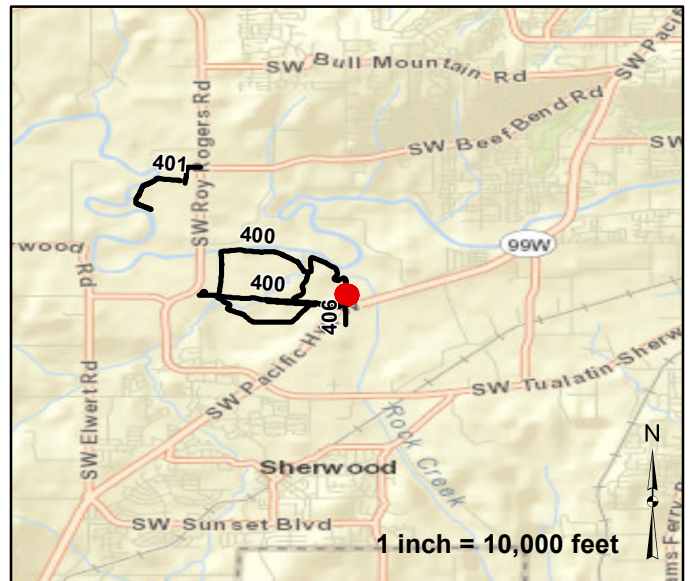
Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
-	3761	19	Excellent	Concrete	\$0	01-12-2013	\$47,400



Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
Other FWS roads			Guardrail		Other		Good
			Fee Station		Problem Area		Fair
			Begin Section		Culvert		Poor
					Low_Water_Crossing		Failed
					Water_Control_Structure		

Route Number: 905
Visitor Center Parking 1
 From Visitor Center Road (Route 011)

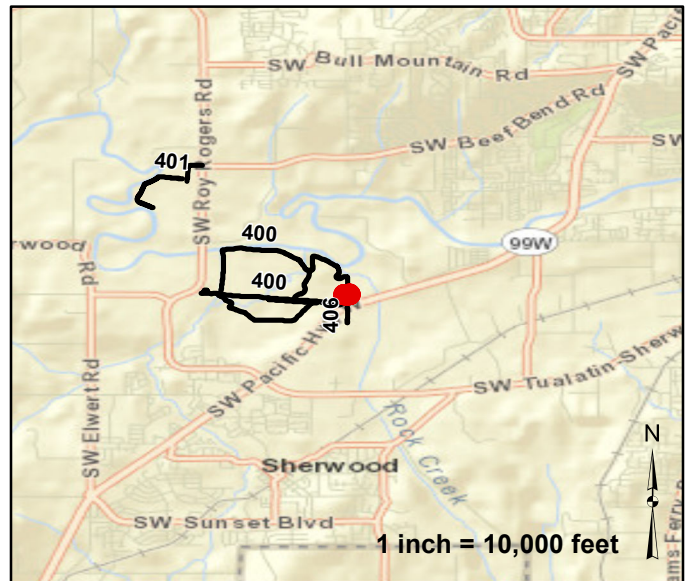
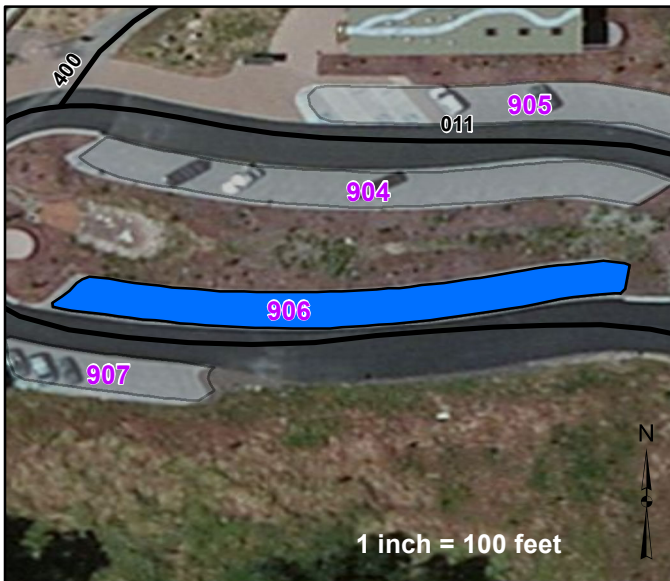
Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
-	2909	12	Excellent	Concrete	\$0	01-12-2013	\$36,700



Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
Other FWS roads		Admin Bldg		Guardrail		Other	Good
		Begin Section		Fee Station		Problem Area	Fair
						Culvert	Poor
						Low_Water_Crossing	Failed
						Water_Control_Structure	

Route Number: 906
Visitor Center Parking 3
 From Visitor Center Road (Route 011)

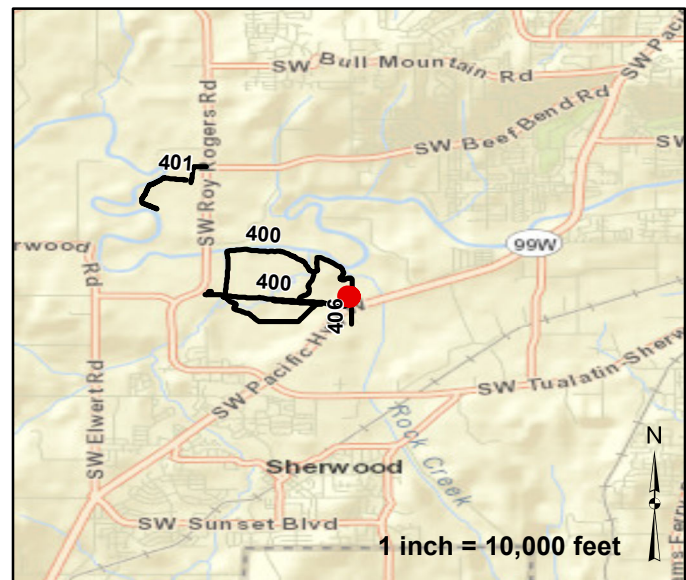
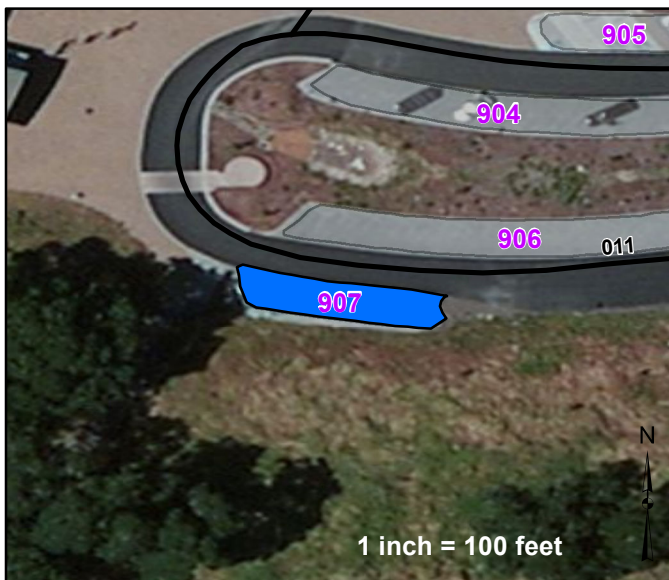
Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
-	3765	19	Excellent	Concrete	\$0	01-12-2013	\$47,500



Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
Other FWS roads		Admin Bldg		Guardrail		Other	Good
		Begin Section		Fee Station		Problem Area	Fair
						Culvert	Poor
						Low_Water_Crossing	Failed
						Water_Control_Structure	

Route Number: 907
Visitor Center Parking 4
 From Visitor Center Road (Route 011)

Asset Number	Area (Sq Ft)	Spaces	Condition	Surface Type	Cost to Improve	Inspection Date	Current Replacement Value
-	1430	7	Excellent	Concrete	\$0	01-12-2013	\$18,000



Parking		Features				Condition:	
	Gate		Boat Ramp		Visitor Center		Excellent
	Admin Bldg		Guardrail		Other		Good
	Begin Section		Fee Station		Problem Area		Fair
			Culvert		Low_Water_Crossing		Poor
			Water_Control_Structure				Failed

Tualatin - 13600 Bridge Inventory					
Rte #	Milepost	NBIS #	Sufficiency Rating	Functionally Obsolete	Structurally Deficient
400	1.87	13600-00041	NA	NA	NA

ROUTE: 011

Features Photographs



Photo: TUAL_C4_0515 Route: 011-001-0.0
Begin Section



Photo: TUAL_C4_0520 Route: 011-001-0.04
Metal Open Rail Gate Electric



Photo: TUAL_C4_0521 Route: 011-002-0.03
Begin Section

ROUTE: 100

Features Photographs



Photo: TUAL_C4_0049 Route: 100-001-0.0
Begin Section



Photo: TUAL_C4_0051 Route: 100-001-0.02
Metal Open Rail Gate Electric

ROUTE: 300

Features Photographs



Photo: TUAL_C4_0054 Route: 300-001-0.0
Begin Section



Photo: TUAL_C4_0055 Route: 300-001-0.03
Metal Chain Link Gate Electric

ROUTE: 400

Features Photographs



Photo: TUAL_C4_0003 Route: 400-001-0.0
Begin Section



Photo: TUAL_C4_0004 Route: 400-001-0.02
Metal Open Rail Gate Electric



Photo: TUAL_C4_0005 Route: 400-001-0.21
Metal WCS Screw Gate 50ft long 24in dia. 3ft deep



Photo: TUAL_C4_0006 Route: 400-001-0.21
Metal WCS Screw Gate 50ft long 24in dia. 3ft deep



Photo: TUAL_C4_0006 Route: 400-001-0.21
Metal WCS Flashboard Riser 50ft long 36in dia. 6ft deep



Photo: TUAL_C4_0007 Route: 400-001-0.21
Metal WCS Flashboard Riser
50ft long 36in dia. 6ft deep

ROUTE: 400

Features Photographs



Photo: TUAL_C4_0008 Route: 400-001-0.74
Metal WCS Flashboard Riser 50ft long 36in dia. 6ft deep



Photo: TUAL_C4_0010 Route: 400-001-0.74
Metal WCS Flashboard Riser 50ft long 36in dia. 6ft deep



Photo: TUAL_C4_0011 Route: 400-002-0.97
Begin Section



Photo: TUAL_C4_0012 Route: 400-002-1.86
Metal WCS Flashboard Riser 50ft long 24in dia. 3ft deep



Photo: TUAL_C4_0013 Route: 400-002-1.86
Metal WCS Flashboard Riser 50ft long 24in dia. 3ft deep



Photo: TUAL_C4_0016 Route: 400-002-1.87
Concrete Bridge NBIS:13600-00041
Chicken Creek Bridge Asset# 10004624

ROUTE: 400

Features Photographs



Photo: TUAL_C4_0014 Route: 400-002-1.87
Metal WCS Flashboard Riser 40ft long 48in dia. 2ft deep



Photo: TUAL_C4_0015 Route: 400-002-1.87
Metal WCS Flashboard Riser 40ft long 48in dia. 2ft deep



Photo: TUAL_C4_0017 Route: 400-002-1.89
Metal Culvert 50ft long 72in dia. 2ft deep



Photo: TUAL_C4_0018 Route: 400-002-1.89
Metal Culvert 50ft long 72in dia. 2ft deep



Photo: TUAL_C4_0019 Route: 400-002-1.89
Metal Culvert 50ft long 24in dia. 2ft deep



Photo: TUAL_C4_0020 Route: 400-002-1.89
Metal Culvert 50ft long 24in dia. 2ft deep

ROUTE: 400

Features Photographs



Photo: TUAL_C4_0021 Route: 400-002-1.98
Metal Open Rail Gate Electric



Photo: TUAL_C4_0022 Route: 400-003-1.84
Begin Section



Photo: TUAL_C4_0023 Route: 400-003-2.02
Metal WCS Flashboard Riser 40ft long 24in dia. 1ft deep



Photo: TUAL_C4_0024 Route: 400-003-2.02
Metal WCS Flashboard Riser 40ft long 24in dia. 1ft deep



Photo: TUAL_C4_0025 Route: 400-003-2.24
Metal WCS Flashboard Riser 40ft long 24in dia. 2ft deep



Photo: TUAL_C4_0026 Route: 400-003-2.24
Metal WCS Flashboard Riser 40ft long 24in dia. 2ft deep
8-007

ROUTE: 400

Features Photographs



Photo: TUAL_C4_0027 Route: 400-003-2.53
Metal WCS Flashboard Riser 40ft long 24in dia. 3ft deep



Photo: TUAL_C4_0028 Route: 400-003-2.53
Metal WCS Flashboard Riser 40ft long 24in dia. 3ft deep



Photo: TUAL_C4_0029 Route: 400-003-2.55
Metal WCS Flashboard Riser 40ft long 36in dia. 3ft deep



Photo: TUAL_C4_0030 Route: 400-003-2.55
Metal WCS Flashboard Riser 40ft long 36in dia. 3ft deep



Photo: TUAL_C4_0031 Route: 400-003-2.74
Metal Open Rail Gate Electric



Photo: TUAL_C4_0032 Route: 400-004-0.71
Begin Section

ROUTE: 400

Features Photographs



01/07/2013

Photo: TUAL_C4_0033 Route: 400-004-1.04
Metal WCS Flashboard Riser 40ft long 24in dia. 3ft deep



01/07/2013

Photo: TUAL_C4_0034 Route: 400-004-1.04
Metal WCS Flashboard Riser 40ft long 24in dia. 3ft deep



01/07/2013

Photo: TUAL_C4_0038 Route: 400-005-2.53
Begin Section



01/07/2013

Photo: TUAL_C4_0039 Route: 400-005-2.54
Metal WCS Flashboard Riser 30ft long 24in dia. 3ft deep



01/07/2013

Photo: TUAL_C4_0040 Route: 400-005-2.54
Metal WCS Flashboard Riser 30ft long 24in dia. 3ft deep



01/07/2013

Photo: TUAL_C4_0041 Route: 400-005-2.55
Metal WCS Flashboard Riser 30ft long 36in dia. 2ft deep
8-009

ROUTE: 400

Features Photographs



Photo: TUAL_C4_0042 Route: 400-005-2.55
Metal WCS Flashboard Riser 30ft long 36in dia. 2ft deep



Photo: TUAL_C4_0043 Route: 400-005-2.67
Metal WCS Flashboard Riser 30ft long 36in dia. 2ft deep



Photo: TUAL_C4_0044 Route: 400-005-2.67
Metal WCS Flashboard Riser 30ft long 36in dia. 2ft deep



Photo: TUAL_C4_0045 Route: 400-005-3.46
Metal WCS Flashboard Riser 40ft long 24in dia. 2ft deep



Photo: TUAL_C4_0048 Route: 400-005-3.46
Metal WCS Flashboard Riser 40ft long 24in dia. 2ft deep



Photo: TUAL_C4_0046 Route: 400-005-3.46
Metal WCS Flashboard Riser
40ft long 36in dia. 2ft deep

ROUTE: 400

Features Photographs



Photo: TUAL_C4_0048 Route: 400-005-3.46
Metal WCS Flashboard Riser 40ft long 36in dia. 2ft deep



Photo: TUAL_C4_0047 Route: 400-005-3.46
Metal WCS Screw Gate 40ft long 12in dia. 2ft deep



Photo: TUAL_C4_0048 Route: 400-005-3.46
Metal WCS Screw Gate 40ft long 12in dia. 2ft deep



Photo: TUAL_C4_0035 Route: 400-006-2.58
Begin Section



Photo: TUAL_C4_0036 Route: 400-006-2.83
Metal WCS Flashboard Riser 30ft long 24in dia. 3ft deep



Photo: TUAL_C4_0037 Route: 400-006-2.83
Metal WCS Flashboard Riser 30ft long 24in dia. 3ft deep
8-011

ROUTE: 401

Features Photographs



Photo: TUAL_C4_0060 Route: 401-001-0.0
Begin Section



Photo: TUAL_C4_0061 Route: 401-001-0.59
Metal WCS Screw Gate 100ft long 24in dia. 3ft deep



Photo: TUAL_C4_0063 Route: 401-001-0.59
Metal WCS Screw Gate 100ft long 24in dia. 3ft deep



Photo: TUAL_C4_0062 Route: 401-001-0.59
Metal WCS Screw Gate 100ft long 36in dia. 3ft deep



Photo: TUAL_C4_0063 Route: 401-001-0.59
Metal WCS Screw Gate 100ft long 36in dia. 3ft deep

ROUTE: 402

Features Photographs



01/07/2013

Photo: TUAL_C4_0064 Route: 402-001-0.0
Begin Section



01/07/2013

Photo: TUAL_C4_0065 Route: 402-001-0.01
Metal Open Rail Gate

ROUTE: 403

Features Photographs



Photo: TUAL_C4_0066 Route: 403-001-0.0
Begin Section



Photo: TUAL_C4_0067 Route: 403-001-0.0
Metal Open Rail Gate

ROUTE: 404

Features Photographs



Photo: TUAL_C4_0068 Route: 404-001-0.0
Begin Section

ROUTE: 405

Features Photographs



Photo: TUAL_C4_0069 Route: 405-001-0.0
Begin Section



Photo: TUAL_C4_0070 Route: 405-001-0.0
Metal Open Rail Gate



Photo: TUAL_C4_0071 Route: 405-001-0.06
Metal Open Rail Gate

ROUTE: 406

Features Photographs



Photo: TUAL_C4_0530 Route: 406-001-0.0
Begin Section



Photo: TUAL_C4_0531 Route: 406-001-0.07
Metal Open Rail Gate Electric

Accident Summary

Number of Accidents Reported	Timespan of Accidents	Injuries	Fatalities
0	No Accidents to Report	0	0

APPENDIX

FWS ROAD FUNCTIONAL CLASSIFICATION	
Class I	Principal Refuge Road (Public Roads) - Routes that constitute the main access route, main auto tour route, or thoroughfare for refuge visitors. These routes are accessible by 2WD vehicles. Routes are numbered from 10 to 99.
Class II	Connector Refuge Road (Public Roads) - Routes that provide circulation within the refuge. These routes can also provide access to areas of scenic, scientific, recreational or cultural interest, such as overlooks, campgrounds, education centers, etc. These routes are accessible by 2WD vehicles. Routes are numbered from 100 to 199.
Class III	Special Purpose Refuge Road (Public Roads) - Roads that provide circulation within special use areas such as campgrounds or public concessionaire facilities or access to remote areas of the refuge. These routes may not be 2WD accessible. Routes are numbered from 200 to 299
Class IV	Administrative Access Road (Administrative Roads) - Routes intended for access to administrative developments or structures such as maintenance offices, employee quarters, or utility areas. These routes are accessible by 2WD vehicles. These routes may restrict access to the general public. Routes are numbered from 300 to 399.
Class V	Restricted Road (Administrative Roads) - Routes normally closed to the public, such as maintenance roads, service roads, patrol roads, and fire breaks. These routes may be open to the public for a short period of time for a special use, such as hunting access. These routes may not be 2WD accessible. Routes are numbered from 400 to 499.

A refuge road system contains those routes within or giving access to a refuge or other unit of the FWS that are administered by the FWS, or by the Service in cooperation with other agencies. The assignment of a functional classification (FC) to a refuge road is not based on traffic volumes or design speed, but on the intended use or function of that route.

DESCRIPTION OF RATING SYSTEM

Rating Data is collected on five different surface types: Asphalt, Concrete, Gravel, Native Improved and Native Primitive. The Utah LTAP Center's Remaining Service Life (RSL) system is used for all surface types. The RSL system is based on the Strategic Highway Research Program's (SHRP) Distress Identification Manual.

Asphalt Rating System

Data is collected on the following distresses and conditions:

- **Fatigue Cracking** - Interconnected cracks forming small irregular shapes.
- **Longitudinal Cracking** - Cracks running parallel with the roadway, in the direction of traffic.
- **Transverse Cracking** - Cracks perpendicular to the roadway, going across the lane or lanes.
- **Block Cracking** - Interconnected cracks forming large blocks.
- **Edge Cracking** - Cracks running along the edge of the pavement surface.
- **Patches** - Original surface repaired with new asphalt patch material.
- **Potholes** - Holes or depressions in the pavement.
- **Rutting** - surface depressions in the wheel paths.
- **Roughness** - Evenness of pavement for serviceability.
- **Drainage** - Ability of the road surface to drain water based on proper slope.

A Condition Rating value is calculated for each homogenous pavement section, and can be up to 1 mile in length.

Rating Index Formula

Fatigue, longitudinal, transverse, block, and edge cracking, along with patching and potholes are rated on a 0 - 9 scale (0 = no distress, 9 = maximum distress). The rating given is based on the extent and the severity of the distress. Rutting, roughness, and drainage are rated on a 0 - 3 scale (0 = excellent, 3 = poor). Each distress type has a given Remaining Service Life (RSL) value (in years) based on the rating for that distress. The distress rating resulting in the lowest RSL value is considered to be the governing distress. That value is assigned as the RSL of the road segment.

Concrete Rating System

Data is collected on the following distresses and conditions:

- **Spalling of Joints** - Chipping, breaking, or cracking of slab edges
- **Joint Seal Damage** - Any damage or condition that enables materials or water to infiltrate into the joint from the surface.
- **Corner Breaks** - A portion of the slab separated by a crack that intersects the adjacent transverse and longitudinal joints, forming approximately a 45° angle to the direction.
- **Broken Slabs** - Faulting and/or cracking localized to individual slabs.
- **Faulting** - Difference in elevation across a crack or joint.
- **Longitudinal Cracking** - Cracks in the pavement running parallel to road.

- **Transverse Cracking** - Cracks in the pavement running perpendicular to the direction of traffic.
- **Patch Deterioration** – Faulting, settling, or cracking of previously placed patch
- **Map Cracking** – A series of cracks that extend only into the upper surface of the Slab

A Condition Rating value is calculated for each homogenous pavement section, and can be up to 1 mile in length.

Rating Index Formula

The rating procedure for concrete pavement is the same as that for asphalt pavement described previously. Each of the distresses described above are rated on the same 0 – 9 scale. The governing distress is then determined and the RSL associated with that distress is assigned to the road segment.

Gravel and Native Improved Rating System

Data is collected on the following distresses and conditions:

- **Cross Section (Gravel, Native Improved only)** - Roadway built so that the center is higher than the shoulder, to prevent water from pooling on roadway.
- **Roadside Drainage (Gravel, Native Improved only)** - Roadside ditches and culverts to handle water flow and prevent pooling on the roadside.
- **Corrugations (Washboarding)** - Small trenches or holes developing perpendicular to the roadway.
- **Potholes** - Holes or depressions in the roadway.
- **Rutting** - Depressions running parallel with the roadway, in the wheelpaths.
- **Dust** - Amount of dust caused by traffic.
- **Loose Aggregate (Gravel Only)** - Loose gravel, typically piled up on the roadway edges or centerline.

A Condition Rating value is calculated for each homogenous pavement section, and can be up to 1 mile in length.

Rating Index Formula

The rating procedure for unpaved roads is the same as that for asphalt and concrete pavements described previously. Of the distresses described above, corrugations, potholes, rutting, and loose aggregate are rated on the same 0 – 9 scale previously mentioned. Cross section, roadside drainage, and dust are rated on the same 0 – 3 scale described for asphalt pavement. The governing distress is then determined and the RSL associated with that distress is assigned to the road segment.

Condition Descriptions by Surface Type

The following definitions are used to describe pavement condition for the various surface types. These are general guidelines for condition indications.

Asphalt

Excellent – Recently constructed or overlaid road where construction or overlay was performed correctly- No maintenance required. RSL = 19-20 years.

Good – Low extent longitudinal and transverse cracks. All cracks are 1/4" or less with little or no crack erosion. Patches are in good condition and applied correctly. Routine Maintenance recommended. RSL = 13-18 years.

Fair - Roads are in good structural condition with little or no fatigue cracking. Longitudinal, transverse, and edge cracking is at medium extent and severity. Block cracking is not extensive. Any patches are in good condition. Preventative maintenance recommended. RSL = 7-12 years.

Poor - Road beginning to show signs of structural distress. Fatigue cracking is medium to high extent and medium severity. Cracking will be severe. Surface may have severe block cracking and show. Patches are in fair to poor condition. There is moderate distortion or rutting and occasional potholes. Rehabilitation recommended. RSL = 1-6 years.

Failed - Road is severely deteriorated. Signs of structural failure appear along with severe and extensive fatigue cracking, distortion, potholes, or extensive patches in poor condition. Reconstruction recommended. RSL = 0 years.

Concrete

Excellent - New pavement. No maintenance required. RSL = 19-20 years

Good - First signs of transverse cracking, patch or repair, more extensive pop-outs, or scaling. Sealing or routine maintenance recommended. RSL = 13-18 years.

Fair – Pavement has joint or crack spalling, and/or faulting, along with cracking at corners with broken pieces. Any Patches are in fair condition and faulting is at a minimum. Preventative maintenance recommended. RSL = 7-12 years.

Poor - Joints and cracks are open 1 inch, spalled, or patched. Faulting is more severe. Rehabilitation recommended. RSL = 1-6 years.

Failed - Most slabs have failed structurally, and faulting is severe. Reconstruction recommended. RSL = 0 years.11-9

The following table shows the relationship between RSL and condition.

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE (Asphalt and Concrete Pavements)								
	FAILED	POOR		FAIR		GOOD		EXCELLENT
RSL Years	0	1-3	4-6	7-9	10-12	13-15	16-18	19-20

Gravel and Native

Excellent - Newly constructed road that has been constructed properly with proper crown, drainage and gravel layer. Little or no distress. No maintenance recommended. RSL = 8-10 years.

Good - Crown, drainage provisions, and gravel layer are in good condition. Distress limited to traffic effects such as dust, loose aggregate, and low severity corrugations (wash boarding). RSL = 5-7 years.

Fair - Adequate drainage and crown through majority of roadway. Crown repair, ditch improvement may be necessary. Road has more severe corrugations and potholes. Preventative maintenance recommended. RSL = 3-4 years.

Poor - Travel at slow speeds is necessary. Additional gravel layer needed to carry traffic. Poor crown. Ditching is inadequate and rutting is extensive and severe. Rehabilitation recommended. RSL = 1-2 years.

Failed - Travel is difficult, and road may be closed at times. Rutting and Corrugations are very severe. Total Reconstruction of road is recommended. RSL = 0 years.

The following table shows the RSL values for gravel and native roads in terms of excellent, good, fair, poor, and failed condition.

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE (Gravel and Native Surfaces)					
	FAILED	POOR	FAIR	GOOD	EXCELLENT
RSL Years	0	1-2	3-4	5-7	8-10

NATIVE PRIMITIVE/IMPROVED RATING SHEET

<u>Cross Section (Crown)*</u>			
Severity	Condition		Description
	No Defects	0	Crown 4-6" with no restriction of water flow from centerline to ditch.
	Minor Defects	1	Inadequate or inconsistent crown. Drainage to ditch may be restricted.
	Moderate Defects	2	Flat crown, drainage to ditch restricted.
	Major Defects	3	Reverse crown, bowl-shaped road, drainage on roadway

<u>Rutting</u>				
Severity	Extent (Length)			
	No Defects	Low <10%	Med 10-30%	High >30%
	Low < 6"	1	2	3
	Med 6-12"	4	5	6
	High > 12"	7	8	9

<u>Roadside Drainage*</u>			
Severity	Condition		Description
	No Defects	0	Wide, deep ditches (>4') with no restriction to water flow.
	Minor Defects	1	Adequate ditches (>2' deep), minor obstructions restrict water flow.
	Moderate Defects	2	Shallow, narrow and obstructed ditches. Minor erosion of road.
	Major Defects	3	No ditch, drainage on roadway with moderate to severe erosion.

<u>Potholes</u>				
Severity	Extent (Area)			
	No Defects	Low <10%	Med 10-30%	High >30%
	Low < 6"	1	2	3
	Med 6-12"	4	5	6
	High > 12"	7	8	9

<u>Dust</u>			
Severity	Condition		Description
	No Defects	0	No obstruction to sight distance.
	Minor Defects	1	Sight distance > 550'
	Moderate Defects	2	Sight distance 225'-550'
	Major Defects	3	Sight distance < 225'

<u>Corrugations</u>				
Severity	Extent (Length)			
	No Defects	Low <10%	Med 10-30%	High >30%
	Low < 3"	1	2	3
	Med 3-6"	4	5	6
	High > 6"	7	8	9

* Crown and Drainage are not rated for roads that have no constructed crown or drainage. This applies to Native and Gravel roads.

GRAVEL RATING SHEET

Cross Section (Crown)

Severity	Condition		Description
	No Defects	0	Crown 4-6" with no restriction of water flow from centerline to ditch.
	Minor Defects	1	Inadequate or inconsistent crown. Drainage to ditch may be restricted.
	Moderate Defects	2	Flat crown, drainage to ditch restricted.
	Major Defects	3	Reverse crown, bowl-shaped road, drainage on roadway

Rutting

Severity	No Defects	Extent (Length)		
		Low <10%	Med 10-30%	High >30%
	Low < 1"	1	2	3
	Med 1-3"	4	5	6
	High > 3"	7	8	9

Roadside Drainage

Severity	Condition		Description
	No Defects	0	Wide, deep ditches (>4') with no restriction to water flow.
	Minor Defects	1	Adequate ditches (>2' deep), minor obstructions restrict water flow.
	Moderate Defects	2	Shallow, narrow and obstructed ditches. Minor erosion of road.
	Major Defects	3	No ditch, drainage on roadway with moderate to severe erosion.

Potholes

Severity	No Defects	Extent (Area)		
		Low <10%	Med 10-30%	High >30%
	Low < 1"	1	2	3
	Med 1-3"	4	5	6
	High > 3"	7	8	9

Dust

Severity	Condition		Description
	No Defects	0	No obstruction to sight distance.
	Minor Defects	1	Sight distance > 550'
	Moderate Defects	2	Sight distance 225'-550'
	Major Defects	3	Sight distance < 225'

Corrugations

Severity	No Defects	Extent (Length)		
		Low <10%	Med 10-30%	High >30%
	Low < 2"	1	2	3
	Med 2-4"	4	5	6
	High > 4"	7	8	9

* Crown and Drainage are not rated for roads that have no constructed crown or drainage. This applies to Native and Gravel roads.

Loose Aggregate

Severity	No Defects	Extent (Area)		
		Low <10%	Med 10-30%	High >30%
	Low < 1"	1	2	3
	Med 1-3"	4	5	6
	High > 3"	7	8	9

ASPHALT RATING SHEET

Fatigue Cracking

Severity	Extent			
	No Defects	Low 1 crack WP	Med 2 cracks WP	High >30% length
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

Edge Cracking

Severity	Extent (Length)			
	No Defects	Low <10%	Med 10-30%	High >30%
	0-6" from curb	1	2	3
	6-18" from curb	4	5	6
	> 18" from curb	7	8	9

Longitudinal Cracking

Severity	Extent			
	No Defects	Low 1 crack full length	Med 2 cracks full length	High >2 cracks full length
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

Block Cracking

Severity	Extent (Length)			
	No Defects	Low > 15x15' squares	Med 15-10' squares	High <10x10' squares
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

Transverse Cracking

Severity	Extent (ft between cracks)			
	No Defects	Low > 200'	Med 200-50'	High < 50'
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

Utility Cuts

Severity	Extent (Length)			
	No Defects	Low <10%	Med 10-30%	High >30%
	Low-Cracks < 1/4"	1	2	3
	Med-Cracks 1/4-3/4"	4	5	6
	High-Cracks > 3/4"	7	8	9

Drainage/Roughness/Rutting

Severity	Condition		Description
	No Defects	0	Wide, deep ditches with no obstructions, smooth ride, no rutting, no potholes.
	Minor Defects	1	Drainage may be obstructed, < 1" rutting, minor roughness.
	Moderate Defects	2	Poor drainage, 1-2" rutting, noticeable roughness, potholes < 6" wide.
	Major Defects	3	No drainage; > 2" rutting; potholes 6-12" wide create roughness requiring reduced speeds.

CONCRETE RATING SHEET

Spalling of Joints

Extent (% joints)				
No Defects	Low <10%	Med 10-20%	High >20%	
Severity	Low Spalls < 3"	1	2	3
	Med Spalls 3-6"	4	5	6
	High Spalls > 6"	7	8	9

Broken Slabs

Extent (% slabs)				
No Defects	Low <5%	Med 5-15%	High >15%	
Severity	Low-no more than 3 pieces, no spalling/faulting	1	2	3
	Med-broken into >3 pieces, spalling/faulting <1/4"	4	5	6
	High-4 or more pieces, spalling/faulting >1/4"	7	8	9

Transverse Cracks

Extent (% slabs)				
No Defects	Low <10%	Med 10-20%	High >20%	
Severity	Low-Cracks < 1/8"; no spalling/faulting	1	2	3
	Med-Cracks 1/8-1/2"; spall <3", fault >1/4"	4	5	6
	High-Cracks > 1/2"; spall >3", fault >1/4"	7	8	9

Joint Seal Damage

Extent (%joints)				
No Defects	Low <10%	Med 10-20%	High >20%	
Severity	Low <10% joint length	1	2	3
	Med 10-50% joint length	4	5	6
	High >50% joint length	7	8	9

Faulting

Extent (Length)				
No Defects	Low <10%	Med 10-30%	High >30%	
Severity	Low < 1/2"	1	2	3
	Med 1/2-1"	4	5	6
	High > 1"	7	8	9

Patch Deterioration

Extent (Area)				
No Defects	Low <10%	Med 10-30%	High >30%	
Severity	Low-no fault, no settle at perimeter	1	2	3
	Med-fault & settle <1/4" at perimeter	4	5	6
	High-fault & settle >1/4" at perimeter, cracked patch	7	8	9

Corner Breaks

Extent (% of slabs)				
No Defects	Low <10%	Med 10-20%	High >20%	
Severity	Low-corner cracks, no spalling or faulting	1	2	3
	Med-crack slightly spalled & faulted <1/4"	4	5	6
	High-crack highly spalled & faulted >1/4"	7	8	9

Longitudinal Cracks

Extent (% slabs)				
No Defects	Low <10%	Med 10-20%	High >20%	
Severity	Low-Cracks < 1/8"; no spalling/faulting	1	2	3
	Med-Cracks 1/8-1/2"; spall <3", fault >1/2"	4	5	6
	High-Cracks > 1/2"; spall >3", fault >1/2"	7	8	9

Map Cracks

Extent (Area)				
No Defects	Low <10%	Med 10-20%	High >20%	
Severity	Low-small connected cracks, no spalling	1	2	3
	Med-connected cracks, no spalling	4	5	6
	High-large connected cracks with surface spalling	7	8	9

Deficiency Ratings With Associated Remaining Service Life

Asphalt Rating Sheet

Fatigue Cracking		Edge Cracking		Transverse Cracking		Utility Cuts	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	20	0	20	0	20	0	20
1	10	1	12	1	14	1	14
2	8	2	10	2	12	2	12
3	6	3	8	3	10	3	10
4	8	4	10	4	12	4	12
5	6	5	8	5	10	5	10
6	4	6	6	6	8	6	8
7	6	7	8	7	10	7	10
8	2	8	6	8	6	8	6
9	0	9	4	9	2	9	2

Longitudinal Cracking		Block Cracking		Drainage/Roughness/Rutting	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	20	0	20	0	20
1	14	1	12	1	16
2	12	2	10	2	10
3	10	3	8	3	4
4	12	4	10		
5	10	5	8		
6	8	6	6		
7	10	7	12		
8	8	8	6		
9	6	9	2		

Concrete Rating Sheet

Spalling		Broken Slabs		Transverse Cracks	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	20	0	20	0	20
1	15	1	15	1	18
2	12	2	12	2	15
3	10	3	10	3	12
4	12	4	12	4	15
5	10	5	10	5	10
6	8	6	8	6	6
7	10	7	10	7	10
8	6	8	6	8	4
9	0	9	0	9	0

Joint Seal Damage		Faulting		Patch Deterioration	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	20	0	20	0	18
1	16	1	15	1	16
2	14	2	12	2	14
3	12	3	10	3	12
4	14	4	12	4	12
5	10	5	8	5	10
6	8	6	6	6	8
7	12	7	10	7	10
8	8	8	4	8	6
9	6	9	0	9	0

Corner Breaks		Longitudinal Cracks		Map Cracks	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	18	0	20	0	20
1	16	1	18	1	18
2	14	2	15	2	15
3	12	3	12	3	12
4	12	4	15	4	12
5	10	5	10	5	10
6	8	6	6	6	6
7	10	7	10	7	10
8	6	8	4	8	4
9	0	9	0	9	0

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE IN YEARS (Asphalt & Concrete Roads)

RSL	FAILED 0	POOR 1 - 6	FAIR 7 - 12	GOOD 13 - 18	EXCELLENT 19 - 20
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Deficiency Ratings With Associated Remaining Service Life

Native Primitive Improved Rating Sheet

Cross Section		Rutting		Roadside Drainage	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	10	0	10	0	10
1	7	1	9	1	8
2	5	2	7	2	4
3	0	3	5	3	0
		4	7		
		5	4		
		6	3		
		7	4		
		8	2		
		9	0		

Potholes		Dust		Corrugations	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	10	0	10	0	10
1	9	1	8	1	9
2	7	2	6	2	7
3	5	3	2	3	7
4	7			4	6
5	4			5	5
6	3			6	5
7	4			7	4
8	2			8	3
9	0			9	0

Gravel Rating Sheet

Cross Section		Rutting		Roadside Drainage	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	10	0	10	0	10
1	7	1	9	1	8
2	5	2	7	2	4
3	0	3	5	3	0
		4	7		
		5	4		
		6	3		
		7	4		
		8	2		
		9	0		

Potholes		Dust		Corrugations	
Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life	Distress Rating	Remaining Service Life
0	10	0	10	0	10
1	9	1	8	1	9
2	7	2	6	2	7
3	5	3	2	3	7
4	7			4	6
5	4			5	5
6	3			6	5
7	4			7	4
8	2			8	3
9	0			9	0

Loose Aggregate	
Distress Rating	Remaining Service Life
0	10
1	9
2	8
3	7
4	8
5	7
6	6
7	5
8	3
9	0

SUBJECTIVE CONDITION RATING FOR REMAINING SERVICE LIFE IN YEARS (Gravel & Native Roads)

RSL	FAILED	POOR	FAIR	GOOD	EXCELLENT
	0	1 - 2	3 - 4	5 - 7	8 - 10